The Builder.

SATURDAY, JUNE 2, 1855.

THE profound observation with which Sterne commences his "Sentimental Journey," to the general justice of which much of our military and transport organization has of late borne a perhaps reluctant testimony, has scarcely held good with respect to the arrangements made by the executive of the Great Exhibition. "Matters" have certainly not been "better managed in France" than they were with us; and, as a consequence, those inevitable grumbles, of discontented exhibitors, and worried public, which with us only now and then made themselves audible through the storm of plaudits, in Paris have swelled into such a growl, that the voice of those who would timidly assert, what is perfectly true, that the Exhibition, taken as a whole, will be one of the most delightful and interesting collections of illustrations of art and industry ever brought together, is at once drowned by the chorus of malcontents.

Too many of the sources of this general irritation, so far as the building for manufactures is concerned, must be recognized in the extremely deficient provisions made for the physical comfort of those who are likely to be its principal occupants during the summer months. It will scarcely be believed that up to within two months of the opening, scarcely any provision whatever was made either for the admission of fresh air into the ground level of the building, or for getting rid of the vitiated atmosphere at the apex of the roof. The consequence of this want of forethought was, that during the busy time, in which exhibitors ought to have been unpacking and arranging their goods, workmen were busy beneath their feet, and over their heads, in cutting great drains right through the building for the fresh air channels, and in raising a portion of the glass roofing along the whole length of the summit of each semi-cylindrical vault for the escape of the heated gases. From the one operation arose constant clouds of dust, besprinkling everything with a fine white powder; and, from the other, every now and then descended fragments of broken glass, and other equally dangerous missiles.

The worst of all is, that up to the present time, neither of these palliatives is entirely completed or successful; the truth being, that the areas of the apertures are still insufficient for spontaneous ventilation, while the building is ill adapted for the introduction of any artificial stimulants to a rapid circulation of air.

It is to be regretted that the authorities have neglected to become wiser by the past. Almost every defect pointed out in the last French Exhibition, of 1849, by Mr. Digby Wyatt, in his report on the display of that year,* is perpetuated, and even aggravated, in the present arrangements. This is especially the case in respect to the exits and entrances, the catalogue, the want of system in the disposal of the currents of visitors, the classification of goods, &c. On the day of the opening there were provided neither refreshment nor retiring rooms, and the inconvenience and shifts to which the workmen and all engaged in the preliminary labours were subjected in consequence of such deficiencies, can be better imagined than described.

Happily, however, there is something in the specific gravity of any really great national work, and in the momentum it acquires when once fairly started, which carries away before it swarms of those petty impediments which would effectually bar the progress of any less weighty enterprise. It is the interest of so many that it should succeed, that the barriers interposed by the mismanagement of a few are soon removed and their mistakes rectified. Ballasted by such heavy interests, however much it may have heeled over, a good ship always rights itself; and once righted, the breath of success soon swells its sails, and carries it proudly forward in the current of progress. Such, let us hope, may be the case with the Paris Exhibition: it would be a thousand pities to see it wrecked through bad steering and seamanship.

The whole enterprise, as is doubtless known to the majority of our readers, is divided into three distinct sections, — raw produce and machinery, the basis of manufactures, — manufactures proper,—and fine arts. The first section is by far the most incomplete, and will scarcely be in satisfactory working order by the end of June. It will occupy an enormously long building adjacent to the principal structure, and running parallel to the bank of the Seine, for a distance of nearly two-thirds of a mile.

It is about 100 feet wide, and has a gallery on each side of the centre running along a considerable portion of its length. It is simple and clever in construction, and but for its closely-boarded floor, and deficiency of ventilation, would appear admirably adapted for the duty it has to perform. The arrangements for driving the machinery in motion are of the most extravagant kind, and elicited anything but complimentary remarks from the practical engineers, foreign as well as British, by whom their merits were discussed. One of the consequences of this cumbrous design most to be regretted is the delay which its carrying out has involved. Large combinations of mechanism are very costly to transport and erect, and the loss of the services of a valuable machine falls heavily on its proprietor: thus every day's delay in setting them in motion increases the expenses of their exhibitors, while it proportionally contracts the extent of good their exhibition might do, either to the general public, or to the producers and consumers. It was in this building that the celebrated chaos of packing-cases reigned which was generally nicknamed Balaklava; and in spite of the energies of the all-energetic Mr. Cole, and his indefatigable assistants, Captain Fowke and Mr. Owen, to vindicate the ascendency of mind over matter, and to rescue the English cases from the *mêlée*, it was long before order could be established. Mr. Wallis, the well-known master of the Birmingham School of Design, worked hard in the same good cause. To describe the general confusion of the "*Annexe*," as the great building on the "Cours la Reine" is called, on the day of opening, would require the pen of an Ovid. Let us hope that such a description of chaos might, like his, prove only a preface to a series of "metamorphoses" at least of a demi-god-like character; and that when "order" may, at last, come "out of chaos," the darkness of the past may but enhance the brightness of the present.

It was in the main building—that destined for the reception of manufactured goods—that the inaugurative ceremony took place; and as the *Times* has already graphically described the scene, we shall not recapitulate such self-evident circumstances as that the Empress looked lovely, and the Emperor rather bowed down by that inevitable burden of care a crown seems doomed now-a-days to entail upon its wearer. We cannot but remark, however, in vindication of the justice of the strictures we have felt it our duty to make upon the imperfection of the building and general arrangements, that the same want of a wise governing power was no less perceptible in the impromptu ordering of the procession and spectacle, than it had been in all that had been done, and left undone, by the authorities, previous to the opening.

The building may be described, concisely, as composed of a great nave, entirely surrounded by an aisle; the nave being about 650 feet long, by a clear span of about 160 feet; and the aisle being of a uniform span of about 85 feet.* Both nave and aisle are covered with semi-cylindrical roofs of glass The whole of the construction is in iron, encased on the exterior in stone walling, divided into two stories, with two ranges of round-headed windows, about 10 feet wide. The whole of the aisle is divided by a gallery into two floors, to which these ranges of windows respectively give light—that is to say, give light on the ground floor, where it is too much needed, and fail, of course, to give it on the gallery level, which is one blaze of light from the glass overhead. Externally the architecture of these stone enclosures is agreeable enough, excepting in the centre mass, where regular columns are introduced, so stumpy as to appear completely crushed down by the heavy entablature and attic they support, or appear to support. The most satisfactory feature in the whole design is the treatment of the staircases, and of the pavilions in which they are inclosed. In these both the stone and plasterer's work is well composed and admirably executed.

The skill shown in the design of these pavilions, so far as the treatment of stonework is concerned, has not been extended to the arrangement of the forms of the constructive ironwork, which is heavy and altogether wanting in the Metallic style: the mouldings and ornaments are all borrowed from masonry, even to the marking of the keystones of semi-circular arches, while the proportions of the columns and girders are exceedingly cumbrous. To such an extent has iron been used in positions where its mass was a superfluity, that we were assured by the head of a well-known firm, largely engaged in the execution of works of a similar character in this country, that he had deliberately proposed covering double the area, in the same spans, with precisely the same amount of metal. It is not on the shoulders of Mr. York, the contractor for the whole of the works, that blame should be laid for such profusion, but rather on those of the authorities, who, in grasping after the same architectural effect of detail to which they were accustomed in stone, failed to attain its true scale of proportion; and, of course, altogether missed that refinement and lightness which the allotment to iron of its just economy of substance rarely fails to secure. The whole of the internal construction is painted of a light-grey colour—somewhat similar to that Mr. Brunel and Mr. D. Wyatt have adopted for the metal work of the Paddington station,—a treatment of colour which, in its extreme quietude of tone, may be suitable enough for a railway station, but makes a dowdy garnish to a building destined to contain the most brilliant products of the whole globe. This appears to have been strongly felt, for various attempts have been made to impart a more lively appearance to the interior of the great nave than this universal and almost unbroken grey permitted it to assume. In the first place the great semi-circular windows at each end have been filled with stained glass; and, in the second, flags and pendant banners of the most brilliant colours have been suspended from every practicable point. The stained-glass, which is made to embody vast allegorical compositions, is creditable to the executive abilities of the well-known M. Marechal, by whom it has been supplied, but is

* Prepared by the direction of H. R. H. Prince Albert, and the Council of the Society of Arts.

* A section will be found in a previous number of our journal, Vol. XII. p. 389.

unhappily faulty in its composition. Instead of dividing the subject into such groups as would allow the heavy vertical lines of the structural ironwork to pass free of all essential features, no attention whatever has been paid to them, and figures are cut into halves and quarters without compunction, whilst Commerce and such like are summarily "knocked on the head." How easily this might have been avoided is shown by an admirable design for the same subject exhibited in the architectural department of the fine-art building. Had it been carried out, the architect and stained-glass painter would have appeared to have worked in concert, whereas now it appears hard to distinguish which has most despised the other's work. Unfortunately, the amount of light admitted all round these great stained-glass windows makes them appear opaque and heavy; and, indeed, the conclusion is forced upon the mind of the spectator, either that the architect did not foresee the introduction of the stained glass, and that it formed no part of his original design,—or that if it did he was ignorant of, or failed to provide for, the most obvious conditions necessary to its satisfactory display. The flags and banners have a very gay effect, and relieve much of the monotony felt previously to their being put up.

On the ground-floor, the galleries produce rather an unsatisfactory and dull impression, but on the upper level the scene is very elegant: the lines of ironwork in the roofing fall most agreeably together, and the centre span is a truly noble one: it is a pity, however, that its springing was not higher from the ground.

Our comments on the preliminary arrangements and on the building have run to such a length that we must fain postpone our first impressions of the internal fittings, and goods exhibited.

ON THE ARCHITECTURE OF THE PRE-GOTHIC AGE IN GERMANY, OR THE ROMANESQUE DEVELOPMENT OF THE RHINE AND CENTRAL EUROPE.*

THE position which the architecture of the tenth, eleventh, twelfth, and thirteenth centuries—generally known by the comprehensive term Romanesque—holds midway between the classic severity of earlier ages and the aspiring freedom of Gothic construction, gives it the peculiar interest of being a link of the great chain which connects the old with the new civilization of Europe—the close of Roman splendour with the early dawn of Mediæval art. From the Romanesque buildings of the twelfth and preceding centuries, we learn how the great transition took place from the classic characteristics of breadth, horizontality, and repose, to the airiness and upper tendency exhibited in the Early Gothic structures; a change which, from first to last, occupied the space of nearly a thousand years in its accomplishment. Though extensively practised in these islands by our Norman conquerors, the Romanesque style received such an impress from their hands, and was so deeply imbued with their spirit, that it has retained their name among us as a distinctive appellation. It is to the Continent, therefore, that we must rather look for the purest characteristics of the Romanesque, and especially to Germany, which, though borrowing its original ideas from its subjected Italian estates, was amongst the first to carry them out with individual design, and the last to forsake the cherished forms, and yield up its sturdy "Rundbogen" for the novel and more graceful "Spitzbogen," or pointed arch.

Along that great highway, the Rhine, many a flourishing city was planted by the enterprising sons of the mistress of the world. And now on its banks stand clustered those venerable creations of Christian art, which far excel the few traces remaining of Pagan work and classic decline. Not only, however, on this spot, but throughout Central Europe, are to be seen traces of this once popular style, modified in accordance with local circumstances and individual feeling.* Distinct from, though closely allied to the Lombard edifices of the same date, and the examples of Byzantine influence exhibited at Venice and Ravenna, these Romanesque buildings claim equal kindred with the rival forms adopted in the buildings of the early Christian Church, the flat-roofed Basilica, and the domed temple of Byzantium. And it need excite no astonishment to find such clear traces of the chief features of each, when we remember that both were founded at the same time, for the same object, on the ruins of the same development of art.

Greece perfected the trabeated system of support. It was adopted at Rome, with the addition of a new, and, apparently, antagonistic principle—arcuation. Timidly at first, though boldly afterwards, the two were blended, till confusion became the result. Order succeeded under the artistic hands of the Lombards; and the style, further improved and developed by their German conquerors, became the great and noble Romanesque, which, extending its influence from Central Germany towards the north and the west, in after ages returned to invigorate the productions of its original country, the south. But, independently of their prominent position in the pre-Gothic age, and of their connection with Rome and Byzantium itself, constructively, artistically, and historically, these Romanesque edifices have a grandeur and a character of their own, and a strong claim on our attention by reason of their independent majesty and truth—a claim which has, indeed, been duly acknowledged in the well-known works of our countrymen, Hope, Whewell, Willis, and Pettit.

Although the types of many parts of these Romanesque buildings may be found in Byzantium—in the works of Greek artists, who had studied the arch and column at Rome itself—yet some particulars of their arrangement and construction may be derived from the early Basilicas of Rome. To the former may be referred the vaultings, the apsidal† terminations at the end of the nave and transepts, the semi-domed roofs, the piers, the open cupolas and windows, as well as some peculiarity of detail. To the latter may be attributed the Latin cross shown in the longitudinal and transverse arrangement of the piers and arches—corresponding to the marble avenues of the Basilica, some arrangements of the apses, and many examples of flat roofs, carried by plain walls, pierced with small round-headed windows. Indeed the campanile of Santa Francesca Romana‡ (Rome, A.D. 836), may serve as a type of those subsequently erected on the borders of the Rhine. The connection with the Byzantine types can be directly traced through the relation of Ravenna to that city. In 802 Charlemagne erected the cathedral at Aix-la-Chapelle (on the spot where a previous church was built in 543), in imitation of San Vitale, at Ravenna; and although this cathedral was altered in 983 by Otho III. yet enough remains of the base of the central cupola to indicate the style of the rest of the church. At this time in England, St. Paul's, Canterbury, Peterborough, and St. Albans, had been founded. Did the various edifices still exist which were successively erected on the site now occupied by the cathedral of Cologne, we should have a complete series, commencing from the year 94 of our era. Here Charlemagne built a church in 814 (a little later than that at Aix): another was erected in 873, and destroyed in 1248, in which year the present edifice was commenced.

It is through the works of the Lombards, in the church of S. Michele, at Pavia,§ and elsewhere, that we must trace the connection with the *Basilican* type. In Italy this form is naturally reproduced in most of the ecclesiastical edifices of this period. The church at Pavia dates from 720 to 750; and St. Castor, at Coblenz,* was consecrated in 836, by one who lived much at the former city. Not to mention that curious example at Lorsch (of which only a fragment now remains), consecrated in 774, in the presence of Charlemagne himself, we have, in the above-quoted instances, sufficient proof of the origin of the architecture of the Rhine. We shall see how it flourished for the next three centuries, and how, at the close of the twelfth and commencement of the thirteenth century, it attained its full growth under the protecting care of Frederick Barbarossa, at the very time when he was burning and laying waste the rebellious cities of Lombardy.

The less disturbed times in Germany, producing fewer warlike or palatial buildings, gave opportunity to its artists to lavish their talents on the ecclesiastical edifices of prince-bishops, and the results can be traced even as far as Liege, in the Netherlands.

Proceeding now to examine the particular arrangements which the three great cathedrals of Maintz, Worms, and Spires exhibit, we find that the grand central nave was universally adopted, generally vaulted in a semicircular form; though pointed vaulting was very early introduced. The nave-piers are large and plain, and the arches round. Sometimes there is a triforium, but always a clerestory, with windows as in the aisles, narrow and round-headed. There are transepts at both ends, often with apsidal terminations, which are also seen at the east and west ends of the nave. Over the junction of the nave and transepts, we find a light, open cupola, generally polygonal, *not domical*. There are towers on each side of the apse. If only four, they are very nearly alike in size; though the eastern pair are somewhat smaller. If each transept also has towers, they become little more than turrets, though still of bulk and elevation enough to assist in the grand effect of grouping,—as may be seen at Cologne, Maintz, Worms, Spires, Andernach, Laach, Boppart, and Coblenz. The high altar is approached by many steps, being raised over a crypt, half sunk in the ground, and generally supported by vaults on columns, exhibiting the best details. The entrance is sometimes through a cloister,† surrounding a square court. At Laach Abbey this exists entire. * * * * * *

The constructive requirements for carrying the flat roofs, peculiar to the Italian and Basilican type, were simple; but in vaulting such spans as that of Spires (45 feet), more care was requisite. Large piers, generally square, with pilasters or semi-shafts attached in front to carry the vaulting, bear the arches of the nave,—but between these great pillars a smaller one is often placed, which, with the corresponding halves attached to the sides of the great piers, carries subordinate arches, and is continued upwards to form clerestory compartments beneath the great arch of the nave. This arrangement permits the sub-division of the vaulting of the aisles (which are generally half the width of the nave) into two squares; and so long as only the semicircular arch was used, the square was necessarily the plan of every compartment or vault of the nave. When the pointed arch was introduced, greater freedom in this respect was obtained, and we see it used in the *transverse* arch at Maintz, and both longitudinally and transversely at Worms and Bamberg. The square vaulting of the aisles, and the intermediate piers, were continued, however, long after this improvement, and I consider this subordination of arches to be a feature which, like the orders of tracery at a later period, gives great effect and lines of shadow, hardly to be expected in buildings with mouldings of so plain a character. The caps of these vaulting shafts are often boldly carved, as at Spires and Laach, and the latter even now retain some remnants of the colour with which they were originally covered. The impost mouldings of the arch piers are large and plain: those of the subordinate ones are often not carried round the face

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* The following are extracts from the Essay by Mr. C. F. Hayward, for which the Medal of Merit was awarded in 1854, and which was read at the Meeting of the Institute of British Architects, April 30, 1855.

* See Puttrich's Work on the Architecture of Upper Saxony, from the tenth to the fifteenth century. See also the Works of Moller and Boisserée for illustrations of the buildings described in this paper.

† Yet we have in the majestic ruin of the Basilica of Constantine at Rome two apses—not opposite to each other, one being towards the Forum, and one towards the Coliseum—but this is of an age just preceding the birth of Byzantine art.

‡ Itself copied from an earlier one, by Adrian I. A.D. 772.

§ "It is impossible not to see in Pavia the origin of the Rhine churches."—*Gally Knight.*

* Louis the Pious consecrated St. Castor in 836: it was rebuilt in the latter part of the twelfth century, but some parts were preserved.

† Compare the Atrium at San Clemente, Rome; at San Ambrogio, Milan, A.D. 861; and at the Cathedral at Salerno.

GATEWAY OF KNOSTHORP HALL, YORKSHIRE.

in front. Most of these great churches have only a plain wall above the nave arches, or they sometimes exhibit smaller decorative arches beneath the clerestory. A gallery, called "männerchor," or "mannhaus,"* formed with large openings and a floor over the vaulting of the aisles, has a decided correspondence with the triforium,—a great feature of the later styles. England has many examples of the triforium, but Boppart, Andernach, Sinzig, and a few other smaller churches, are all the examples in Germany; and it is decidedly a Byzantine feature, as is also the vaulting of the apses by semi-cupolas, instead of the groined vaults which succeeded. The position of the apse has been already mentioned, but it remains to state that smaller ones were occasionally built in the east wall of the eastern transepts, as at Laach and Sinzig,—(like the Basilican tribunals), and in this case there are no north and south apses. The towers vary much in form, being square, polygonal, or round, and occasionally passing from one form to the other at the dividing stages; but their construction, or constructional ornamentation, is always the same. At the angle of the square, a strip of wall projects very slightly from the face. These flat pilaster strips, or incipient buttresses, are united several times in the height of the tower by flat bands, or a series of mouldings, carried on corbel tables of small round arches. In the panels thus formed, round-headed openings, single, double, or united under one common arch head, are inserted. Sometimes, in the centre of the wall, a flat strip, corresponding to the projection at the angle, is carried up to join the horizontal string, and is often continued above it to the very top of the tower. The two series of panels thus formed are pierced by windows.

This system (a decided Lombard importation, and seen later in our own Norman and Early English), is carried out in every wall. Cornices and eaves courses are supported on corbel tables of round arches. The apses, whether round, semi-octagonal, or semi-decagonal, are decorated in the same manner, the aisle and clerestory windows occupying the panels. Occasionally modified and varied round rolls are carried up the walls, and tied by horizontal rings of mouldings round the tower itself. A series of larger arches is sometimes carried round the walls on corbels only, without any vertical lines of support from below.* When it was required to cover a round tower with a roof of a polygonal form, the transition was easily accomplished by one or more of these projecting arches on corbels, and in this arrangement we sometimes observe a point in the arch coinciding with the face of the wall, exactly as the Byzantine pendentive. The system was carried out even further by the introduction of the trefoil-round arches and multifoils of pointed as well as round forms, in later examples. Wherever we meet with a building of the Romanesque period we have this characteristic, common enough with us under the term corbel table. The Normans used small carved blocks, as well as corbel arches, and their successors carried out the principle. But in Germany these corbel arches seem to have been so highly appreciated that many complete Gothic towers are formed in this manner, which seems to be peculiarly applicable to brick constructions. The two towers of the Frauenkirche (cathedral) at Munich, 318 feet high (built 1488), and other churches of the same city, have bands of ornaments of this character in carved or moulded brick. The Lombard churches, of course, show this system more or less, and even in the revival we see it carried out in unmatched boldness in the cornice of Florence Cathedral, and in the Campanile of Giotto, to say nothing of the extent to which it was employed in Italian brickwork.

In almost all the modern buildings in the neighbourhood of these early examples this feature is reproduced. In the towers or walls of Laach Abbey,* nearly all the peculiarities above mentioned are to be seen, and the little detached tower in the grounds adjoining may serve as a model to illustrate these remarks.

Exceptions prove the rule, and the church at Boppart, which is peculiar in many other points, has no vertical strip in the two towers, but one immense horizontal one, in the shape of a gallery, connecting them at the base of the spires.†

* Whewell, "Architectural Notes on German Churches," pp. 91, 92.

* Compare the tower of the isolated chapel at Laach with the tower of the church of Sompting, Sussex, of about equal proportions.

GATEWAY OF KNOSTHORP HALL, YORKSHIRE.

THE gateway engraved above is attached to an old hall in the neighbourhood of Leeds, built, I believe, in the former part of the seventeenth century. It belonged to Adam Baynes, who represented Leeds in Parliament at the time of the Commonwealth—the only time it was so represented before the Reform Bill was passed. The stone chairs outside the gate are a singular feature, which I have not remarked elsewhere.

G. C.

* Damaged by fire within the last few months.
† To be continued.

ON THE EMPLOYMENT OF PAINTED GLASS.*

IF all buildings sought to be decorated with painted glass were of one character, or even in one style of architecture, much of the difficulty with which the modern glass-painter has to contend would have no existence. But, since he has to design works for buildings differing in their character or architectural style,—and as no glass paintings are likely to be very satisfactory which do not in some degree harmonize with the architecture with which they are associated,—it is necessary to give up a few minutes to the consideration of the principles which should guide us in designing windows for buildings of any particular character.

It is difficult, owing to the vagueness of language, to find a term by which the difference in the character of buildings can be compendiously expressed. And when I use the term "severity," to express my meaning, I am aware that it is sometimes used to convey the idea of rudeness,—sometimes that refined degree of simplicity which suggests no want or imperfection. But, if I use it in the popular sense, it will be sufficient for my argument. All buildings, then, and sometimes different parts of the same building, are more or less severe in their character. Thus, Norman buildings are more severe than any Gothic buildings, their architecture being a species of the Byzantine, itself derived indirectly from the Roman, but directly from the Greek, which is the severest style of all. So, again, Norman buildings are more severe than Roman ones, and much more severe than Palladian ones. And, again, buildings in the Early English style of architecture are more severe than those in the Decorated or Perpendicular. Moreover, buildings in the same architectural style may be more or less severe than others. And all these buildings require corresponding differences in the glass paintings designed for them.

I have noticed that the glass paintings which seem to harmonize best with Norman and Early English buildings are those displaying a certain degree of severity in the figure-drawing and ornament, and which are executed in a certain severity of manner, necessitating the employment, in these works, of glass of the richest tinture and most powerful hue. I believe that this severity, or roughness of execution, is demanded by the peculiar species of severity which characterises Norman and Early English architecture,—the severity of rudeness as distinguished from the severity of perfect refinement. But, if adopted, it requires, to carry it off and prevent offence to the eye, that it should be disguised by the richest and deepest colouring. To take a familiar example: what can be more crude, or poverty-stricken, than a design of Early English pattern-work, executed on ordinary pellucid white glass?—what a miserable contrast does it present to the real thing, which is painted upon a material something between porcelain and glass in texture, and possessing a rich sea-green hue. A copy of fifteenth-century quarry-work, upon the same glass, would look fifty times as well,—simply on account of the more finished and elaborate character of the pattern. And so it is with the figures.

The thirteenth-century figures, executed with simple black lines, and smear shadow, and broad high lights, tell admirably (bad drawing, and so forth, excepted), when painted on the rich solid-looking material of the period. But their modern representations, done in the same manner on ordinary glass, appear not only very weak, but as if they were absolutely unfinished. Moved to pity by the sight of some of these wretched objects, and at that time not dreaming that the ancient manufacture of glass could be revived, I once took upon myself to recommend the adoption of a more elaborate style of execution than that of the thirteenth century for glass paintings intended for Early English buildings, as being better calculated than it to counteract the flimsiness of the material. Our critics loudly abused what they were too ignorant to understand; and not content with the grossest misrepresentations of my language, they have lately actually had the assurance to taunt me with abandoning my principles, because, having obtained the ancient material, I have advocated a return to the ancient mode of using it. Really I am at a loss which to admire most, their simplicity, their courtesy, or their candour. But, in truth, it will be found not only that a rich solid material is best suited to a simple mode of execution, but that a simple mode of execution is best adapted to the use of a rich solid material. None but a bold dashing style of painting would tell upon a material so powerful in colour as that of the thirteenth century. Fine shading and finish would be absorbed in the intensity of the local tint, and lost. And it would seem that if such a material is to be used with effect, the design should consist either of a pattern or of a picture in which no attempt is made at representing greater depth than we see in a well-sculptured relief. To represent a greater degree of depth or distance than this between the foreground and background of the picture would necessitate the employment of a good deal of glass lighter in tint than what is usually met with in thirteenth-century work. And I do not think that anything could compensate for the consequential loss or diminution of that breadth of deep, intense, vivid colouring which is the characteristic of a twelfth or thirteenth century window, and which of itself appears to harmonize with the severity and gloom of a Norman or Early English interior.

The existing thirteenth-century window appears therefore to be the best type to be followed in designing a window for a Norman or early English building, and it is probable would be found to be the best type for a window intended for a purely Greek building, though, of course, many modifications would be necessary to make the design and execution harmonize with the refinement of the architecture. But I wish to guard myself against being supposed to adduce the old thirteenth-century window for anything else than as a type. Its colouring, both in arrangement, and more particularly in tone, cannot be too highly praised. But its composition is too often crowded and confused; and not only are the figures badly drawn, but their attitudes are, in general, forced and affected. These ancient remains are subjects for study only. They suggest the representation of groups arranged, as in a bas-relief, in a single line; the figures cut out, and rendered distinct, by the ground of the panel, and unaccompanied with any accessories in the background;—of draperies, having the sculpturesque character of the antique; of heads, significant and powerful as those of Raffaelle, touched in with a few bold strokes; and of an architectural style of ornament redolent of Greek art. In short, I know of no style containing more of the germs of true art, or so suggestive, as that of the twelfth and thirteenth centuries; nor one, in the hands of a man possessing artistic feeling and skill enough to derive his inspiration from the same pure and exalted source whence the Byzantine school undoubtedly drew theirs,—so capable of being worked out in a manner alike satisfactory to the antiquary and the connoisseur. I have alluded to the colouring of these early windows in terms of praise. The excellence of that colouring depends principally on the excellence of the individual tints. Arrange the twelfth or thirteenth century glass as you like, still the colouring will not cease to be harmonious. The secret lies in the fact, that not one of these tints is a pure colour: all are more or less modified. The white is a sea green, or a greenish blue: the blue is a neutralised purple: the yellow has green in it: the purple has yellow in it: and the green and the red have brown in them, besides other colours. Chemistry can account for some of these things. Age, to a certain extent, improves the effect of painted glass, by neutralising the colour of a bit here and there. This is particularly the case with the blue. It is well, therefore, to glaze up a good deal of subdued blue along with the more positive blue. I am not averse to the "antiquating," as it is called, of bad modern glass, as it serves to make that tolerable which otherwise would be intolerable. But, however judiciously done, it is but a clumsy and imperfect expedient. The best course is to use a material made like the old, and to anticipate the effect of age, by the partial introduction of glass the tint of which has been modified, in the glass-house, without any loss of brilliancy.

In like manner, hints for the glazing of fourteenth-century windows may be derived from the remains of glass belonging to the Decorated period, though not to the same extent; for nearly all that is worthy of being studied in the works of the artists of the fourteenth century seems borrowed from their predecessors in the twelfth and thirteenth. Their white pattern windows,—their groups of figures in panels—their stems of Jesse,—differ from those of the twelfth and thirteenth centuries only in matters of detail,—not in principle; and from these, no doubt, useful hints may be derived. But canopies executed, as theirs are, without the slightest attempt at perspective, and without showing the recess of the niche in which the figure is supposed to stand, seem to set at naught every rule of art and even of propriety. Their use is sometimes attempted to be justified on account of the facility which the spire-ground is said to offer for the introduction of colour. But this argument is at once met by the remark, that precisely the same effect of colour could be given in a variety of ways, each artistic in itself. But the drollest defence is thus set up by our critics. They say, that the representation of depth should never be attempted in a glass painting, because it is part of the church, and therefore flat in reality; and that the ancient artists purposely selected objects, such as canopies, which, it is admitted, cannot, without an effect of doubt, be intelligibly represented,—and represented them, as we see them,—flat,—as if they had been "ironed out" against the glass,—not indeed from ignorance of the rules of perspective, but intentionally, in order to vindicate the principle for which these gentlemen are contending.

This process of reasoning is certainly very comical, and reminds me of a remark I once heard made by a Master of Arts of the University of Oxford, and who must, therefore, be presumed to have gone through a course of logic. He maintained that the mediæval artists drew their figures incorrectly, not from any inability to draw them correctly,—but purposely, and in order that their works might not be confounded with the more perfect works of the heathen. It is perhaps fortunate for us, that a man with a mind so constituted is not likely to win his way to the judicial bench; otherwise, we might hear of some unhappy wretch convicted of having possession of stolen goods, upon an irresistible inference of his guilt, drawn from the circumstance of the evidence having utterly failed to establish the fact of possession.

So much for our critics' argumentative powers;—now for their taste. All great artists, and all great writers upon art, from Phidias down to Sir Charles Eastlake, whatever their difference of opinion may be on other points, are agreed on this, that, though the existence of certain conditions may impose on the artist the necessity of adopting a flat method of representation, even when the object to be represented is not naturally flat, he fails as an artist if, under such circumstances, he does not contrive to convey to the spectator's mind the idea that the object is as rotund as he knows it to be in nature; the perfection of artistic conventionality being, that it should suggest no defect. In other words, an object like a canopy should not be represented at all, unless it can be represented in relief; and whether it can, depends a good deal on the effect of colour that it may be desirable to produce. The circumstance that the glass forms part of the church wall makes no sort of difference: it has really nothing whatever to do with the question, as any clear-headed person must at once perceive.

Still less does the painted glass of the fifteenth century supply limits for the glazing of perpendicular windows. The pattern-work of that period is well enough; but the appearance of an inartistic flatness and confusion in all the pictures is greater than in the remains of any former period. This is not surprising, when we not unfrequently find that the groups are arranged on a principle of relief. The figures are drawn up on the arc of a circle, not on its chord, as in a twelfth or thirteenth century example. Neither are they, as in the latter instance, sufficiently insulated by means of the ground, nor are any other means adopted to

* See p. 241, *ante*.

ensure distinctness. Hence a perpendicular picture window most resembles a collection of court cards.

It was not until the middle of the sixteenth century that the art of producing a picture, in glass, capable of conveying an adequate idea of depth, was discovered. I have already mentioned the windows at Brussels as most favourable specimens of this art; and I attribute their great power, and completeness of effect, to their extreme simplicity. In one of these windows, of which I have here a drawing, the group is placed in front of an arcade. The whole picture is seen under the influence of bright sunshine, and the shadows throughout are consequently sharp and decided. The blue firmament appears through the opening of the arches, and being contrasted with the dark shadows in the soffits, and on the figures, seems to recede, and this apparent distance gives a peculiar charm to the composition. A window like this bears the stamp of the master's hand, like the cartoons. And in many respects, the principle of its composition is analogous to that of the cartoons. In both cases the artist has had to work with reference to a mode of execution limited in its means, as compared with oil, or fresco painting. And in these windows we recognize the skill of the artist in the manner in which the excellencies of glass painting are displayed to the best advantage, and its defects concealed. And this, to borrow Sir Charles Eastlake's words, in speaking of the cartoons,—"without any sacrifice of such of the proper attributes of painting as were compatible with the means employed; and without any violation of probability."

It is manifest that this style, modified in its details according to circumstances, suggests the type for windows proper for Perpendicular and Palladian buildings. The east window of St. James's, Piccadilly, is, indeed, a sufficient warning against introducing the Byzantine principle of composition into a building in the latter style.

The result of the foregoing remarks is, that there are, in truth, but two styles of composition that need be attended to in painted glass,—the one, in which the picture is arranged on an artistically flat principle, like a bas relief, the figures of course being given a proper degree of roundness,—the other, in which such a degree of depth, or distance, is represented in the picture, as we see in the Brussels glass, or the cartoons,—that the first style is the best whenever the object is to produce a mosaic of rich intense hues, and which will suit only buildings of a certain character;—and that the second is the most appropriate for buildings in a less severe style;—the extent to which the artist should avail himself of the power of producing the effect of depth, being, of course, a point dependant on circumstances. A violent outcry has, no doubt, been raised against the second style; but its authors are, I am happy to say, only our logical critics, or a small fry of glass painters dependant on them for patronage, and who are sagacious enough to see their own interest in decrying a style which, being far more artistical than any of its predecessors, demands some artistic qualities in those who should attempt to carry it out. I shall, therefore, trouble you with no defence of such a style. To say that it is impossible to represent depth or distance in painted glass, even with the limited means afforded by the Mosaic system, is simply to deny the existence of those glass paintings in which this object has been successfully achieved with such means.

Our critics, who, though great sticklers for authority, are always ready to give it up whenever it clashes with their own preconceived notions, are loud in their condemnation of all those glass paintings which, in their opinion, are not in "strict subordination to the architecture." I do not quite understand what they mean by this phrase: perhaps they don't know themselves. But, as those compositions in painted glass which, in a mullioned window, extend beyond the limits of a single light, are especially subjects of their denunciation, and as such alleged solecisms in taste do occur pretty frequently, even in the golden age of the thirteenth century, it becomes a question whether greater credit for sound views is to be given to our critics or to the old artists themselves, whose works, it is admitted, have never yet been surpassed, nor even equalled. That a perfect harmony exists between old glass paintings and the architecture with which they are associated, is what I have asserted in this very paper; but this harmony I hope I have shown depends on something deeper than the confinement of a design between two mullions of a window. Indeed, the harmony between the glass and the architecture is sometimes ensured by a violation of this alleged principle.

To take a familiar instance: a fine thirteenth-century rose window owes its plenitude of effect to the circumstance that the lines of the glass composition are concentric, and therefore in direct opposition to the lines of the stone-work, which diverge, as rays, from the centre to the circumference of the window. And, as if it were that there should be no mistake about this, there is generally found, in some part of the window, a broad concentric border, which is ruthlessly cut through by every one of the mullions of the window.

I do not mean by this to lay down as a rule that all designs in glass should be independent of the mullions of a window,—but only to show that cases may exist—not confined to those windows, by the bye,—in which the general effect of an interior may be improved by carrying one entire design over the whole window; and in such case we may depend upon it that the glass is in harmony with the architecture. Indeed, if the object be to show off the shape of the window tracery, it is even better, when the glass is dark, that its lines should not conform to those of the tracery,—as is shown in one of the diagrams. Though, as a general rule, I think that for a mullioned window, a design of rich mosaic work, like the glass in the Ste. Chapelle, at Paris, is not so appropriate as a white pattern design, such as we see in many English windows of the same date.

In conclusion, I would impress upon you, that originality of design is essential in composing a window. The artist must study the building he is employed to decorate, and make his design to suit its character; instead of merely looking out for some old example to copy,—the design of which can be easily made to fit the size and shape of the window to be filled. Above all, recollect that the ordinary rules of art are as applicable to glass painting as to any other species of painting. It is true that the violation of these rules may be, and often is, overlooked, and even applauded, by persons who set themselves up for critics, without possessing any knowledge of these rules themselves. But, beneath all the accumulated rubbish that is said and written on the subject, runs the deep still current of public opinion, whose real course may not coincide with that of the straws that float on its surface. The English people may be confused by clamour, but not convinced; and, though ours may not be an artistic nation, its innate good sense will eventually vindicate itself in matters of art, as in other matters. Therefore be warned in time; and be guided rather by the works of experienced writers upon art,—such as Eastlake's "Literature of the Fine Arts," which is perhaps the best of all,—or, Leslie's "Lectures," which I mention, as it contains a good *exposé* of modern art-criticism,—than by what appears in the pages of ephemeral publications. There is no royal road to any branch of knowledge. A knowledge of the ordinary principles of art is not necessarily given by a University education, nor, I fear, common sense either, if the works of some of our critics can be taken as a criterion. I have felt it my duty to expose a few of the dogmas, because they are apt to gain a sort of currency by mere repetition, and because I do feel that the currency of these, and similar dogmas, has in great measure been the cause that the art of glass-painting, notwithstanding the very large sums that have been expended on painted windows during the last twenty-five years, is still, at this moment, in a more degraded state, in England than it is in any other country in Europe in which it is practised.

It might have been dangerous for any of you to have questioned these dogmas of our critics; but my case is different, as I want none of their patronage, and despise their praise.

C. WINSTON.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AT the meeting held on the 21st ult. Mr. F. C. Penrose, in the chair, Mr. F. W. Porter was elected as Fellow, and Mr. Joseph Woods, of Lewes, as honorary member.

A communication from Mr. W. L. Donaldson, the honorary solicitor, was read, being "a summary of a report made by Mons. Remont, Architect of the City of Liége, on the Sanitary measures adopted in London." Models of Z. Round's patent bricks to supersede the use of wood bricks, were exhibited and explained by Mr. Wiggington.

The next meeting will be held on the 4th of June, when the Rev. J. L. Petit, M.A. will read "A few Remarks on Italian Architecture."

A committee has been appointed to consider the subject of premises for the Institute with reference to finance, and to report to a general meeting. It is much to be hoped that more commodious premises may be obtained. If Burlington-house is to be appropriated for the use of scientific societies, surely architecture may prefer a strong claim. The State has done little enough for her yet.

On Friday, the 25th, Earl de Grey, president, received the members of the Institute, together with a large number of persons distinguished by position or attainments, at his house in St. James's-square, to the ordinary attractions of which were added numerous folios of drawings and other works of art.

BELGRAVIA.

THIS aristocratic domain, as it may be called, has from accidental circumstances been exalted to its present distinction; for it was originally, and indeed until lately, mere fields, and of a common description. It is the district generally called "Pimlico," of which name there is no correct etymology. In the earliest accounts it is described as the Manor of Eye, situated between the Monastery of Westminster (to whom it belonged) and Chelsea. There is something said about it in Widmore; but, still, its precise situation seemed doubtful, until derivations became useful; thus the Manor of Eye had its Bury, next appeared Eye-bury—the present Ebury.

From Ellis's "Domesday," p. 42, "among the lands of Geoffrey de Mandeville, in Middlesex, in the Hundred of Ossulton, we find Eia entered in 'Domesday,' tom. i. fol. 129: our topographers have omitted to say where this property stood." From the "Chartulary of Westminster Abbey," however, we learn that close upon the time when "Domesday" was taken, Geoffrey de Mandeville gave this Manor of Eye, described as at no great distance from St. Peter's church, to the abbot and convent of that place.—See the "Chartulary of Westminster," Cotton Faust. A. III. fol. 281 b. King William the Conqueror's confirmation of the grant occurs in fol. 576. The same manor, with various other lands, was exchanged by the name of Eyebury with King Henry the Eighth, in the twenty-eighth year of his reign, for the Priory of Hurley, Berks, and some other possessions, by the abbot and convent.—See stat. 28 Henry VIII. cap. 29. It now belongs to the Marquis of Westminster, It is in the parish of St. George's, Hanover-square, although formerly in that of St. Martin-in-the-Fields. The lands taken from the convent were 100 acres, which Henry the Eighth formed into St. James's-park, opposite his palace, Whitehall, and the Convent-garden property, since of very increased value. The church of Westminster, as well as I recollect, is now only possessed of Hurley-wood. The Manor-house there, since erected, occupied the site of the Benedictine Monastery, founded in the reign of William the Conqueror by the fair Cecelina, "to which the monks of Westminster resorted as to their Tusculanum."

The Manor-house, since called Lady-place, had for some centuries been the residence of the Lovelace family, who have left donations to the poor. In the reign of James the Second, private meetings of the leading nobles of the kingdom were held in the subterraneous vault, formerly the burial cavern of the monastery, for calling in the Prince of Orange; and it is said that the principal papers which brought about the Revo-

lution of 1688 were signed there; and on that account William the Third and George the Third visited the vault, which was formed at the great Norman Revolution, and in this place, 600 years afterwards, the Revolution of 1688 was begun. On the last occasion, the house was in the possession of Lord Lovelace, by whom private meetings of the nobility were assembled in the vault. With the extinction of the family of Lovelace, the glory of Lady-place appears to have departed, and one tomb in the little church, although crumbling in decay, attests something of the former magnificence of the Lovelaces, lords of Hurley.

"Dust and ashes,
Mortality and vicissitude to all."

T. H.

PROVINCIAL NEWS.

Frating.—A school-room has just been built at the expense of the Rev. R. Duffield, the rector, in Frating parish, on the borders of the parish of Thorington, for the instruction of the children of both parishes. The school-room was opened on the 10th ult.

Godstone.—A new National and Infant School was opened here on Tuesday before last, with 200 children.

Tenbury.—The foundation-stone of a National School was laid here on Saturday before last.

Liverpool.—We are asked to say that the Liverpool Assurance Company mentioned in our last, as contemplating a new building, is "the Liverpool and London Insurance Company."

Manchester.— On Monday before last, the Town-hall was on fire. The fire was happily soon extinguished, and it was then ascertained how it originated. A zinc speaking-tube had been inserted into a flue, to communicate with the town-clerk's offices and that of the clerk of committees. This flue has in front of it a wooden casing, and the workmen when inserting the tube, according to the local *Courier*, had not replaced the bricks removed, thus allowing soot, which had accumulated in the flue, to fall down beside the wooden casing. About one o'clock on the Sunday morning, the chimney of the A division station, communicating with this flue, had been on fire, and some of the burning soot having got in among that in front of the casing, ignited it also, extending in a short time to the woodwork and flooring, and thence by a wooden pilaster to the roof.

Blackburn.—Mr. Chadwick, of Manchester, the contractor for the making of the roads in the public park here, has commenced operations with about thirty men.

Halifax.—Several engineers, together with the workmen in the employ of Mr. G. Thomson, railway contractor (now engaged upon the Halifax Station), lately resolved to erect a monument to the memory of Mr. W. Watts, jun. of Manchester, civil engineer, who was drowned while bathing near Wakefield, on the 20th of last July. The monument has been constructed at the Halifax Station during its erection. It is in the Gothic style. A moulded base has been prepared, 6 feet 5 inches long, by 2 feet wide, whereon the tablet is placed. On each side of the tablet stand clustered columns, with carved capitals, and rising from each capital is a moulded and carved canopy with crockets and finial. The spandrils are carved. The covering is in the Decorated English style of fourteenth century. The monument is carved from Ringby stone, and executed by Mr. George Shaw, of Halifax. It will be shortly removed to Newton Heath churchyard, where the remains of Mr. Watts are interred.

Darwen.—The foundation-stone of Sunday-schools, in connection with the lower chapel, Darwen, was laid on Saturday week.

Jarrow.—The amount of the accepted tender (that of Messrs. Jackson, Bean, and Gow, of London) for the execution of the entire of the Jarrow-dock works, is stated to have been 358,000*l.* There were fourteen tenders in all, two of which were below the above figures; but there is said to have been only a difference of 7,000*l.* out of seven of the tenders. The tender offered by Mr. Hutchinson, of Hartlepool, was 386,200*l.*; while that of Mr. Cail was 386,000*l.*; and Mr. Lawton, 380,000*l.* The ground, it is stated, is already staked out at Jarrow, as well as the branch railway for the trunk line near to Brockley Whins.

South Shields.—There was a proposal before the town-council of South Shields, some short time ago, to enclose the open area under the town-hall of that borough, by way of effecting a "public improvement." But plans of a new building altogether, to occupy the same (or rather an extended) area, and to accommodate, not only the town-council, but the post-office, custom-house, and other public establishments of the place, with also several tradesmen, were subsequently submitted, by Mr. Matthew Thompson, of Newcastle, architect, to the local authorities, with a statement showing that such a structure might prove a source of revenue to the corporation. The council very commendably paused in their patchwork enterprise; and we trust that so good a site as the centre of Shields market-place will be devoted to Mr. Thompson's Gothic edifice.—*Gateshead Observer.*

THE LAND OF THE '51 COMMISSIONERS.

We are often asked as to the progress which is being made on the estate at Kensington, purchased for the "Industrial University," but have had little to say. Now, however, there appears to be again a movement on the land: the roads are advancing, and negociations with circumjacent owners and tenants are being revived. There is a little scandal current, but we must have something more than anonymous assertions. The road from Brompton Church and the "Bell and Horns," is to be opened westward, we are told, very soon. The wall, enclosing the ground of the Oratorians at a distance back from the present line, has been built some time. The opening should make a great improvement in that part of Brompton. The road thence for half a mile towards Hyde-park-corner, offers great facilities for improvement.

THE METROPOLITAN BUILDINGS BILL.

We are still wholly in the dark as to the condition into which the proposed Buildings Bill has actually been brought by the Commons' committee. Comment is therefore out of the question. When the committee broke up last week, it was determined that the Bill, as altered, should be reprinted; but up to the moment before going to press, we were informed that this had not been done.

Since our last we have had an example of the want of uniformity in practice, and the injurious uncertainty which will result from leaving the enforcement of the Act with the police-magistrates. By the direction of the official referees, the district surveyor for South Islington summoned to the Clerkenwell Police Court the builder of a greenhouse (22 feet square, and erected close to the high road, to serve as a florist's shop), for having built the same without giving the notice required by the Act. The Act states that *every* building, "of what nature soever" (except the buildings comprised in a given schedule, and sewers), shall be built in conformity with the rules of the Act; and that notice shall be given "before *any* building shall be begun to be built:" and the referees decided immediately after the Act was passed,—

"That inasmuch as all buildings (except buildings comprised in Schedule B), are by section 5 of the said Act, brought within its operation, the greenhouse or building in question must be deemed to be within the provisions of the said Act.

That the exception in Schedule C, part 7, must be deemed to apply only to the mode of determining the rate of such greenhouses or buildings, and the thickness of the walls and any other matter dependent upon the rate of building.

That greenhouses, vineries, aviaries, or such like buildings are within the jurisdiction of the district surveyor. And further,

That such buildings are under the direction of the district surveyor, under Section 8 of the said Act."

But notwithstanding this, and that last week a magistrate at another court had reaffirmed that notice was unquestionably necessary, the sitting magistrate at Clerkenwell decided, after two hearings, that notice was *not* necessary. The exception in Schedule C, part 7, refers simply and specifically "as to the rates and walls:" it does not exempt "greenhouses, vineries, aviaries, or such-like *buildings*," from the requirements as to footings where walls are used, as to height of chimney, if a chimney be built, or as to the necessity of covering every roof "with slates, tiles, metal, glass, artificial stone, or cement;" and how can the surveyor see that these and other requirements are attended to, without which the public safety is endangered, if notice be not given to him?

The solicitor for the owner threw out the *gentlemanly* imputation that it was simply a question of *fee*, although the surveyor had sought to show his own feeling in the matter by relinquishing, at the commencement of the proceedings, any claim which he might have, in favour of the "poor-box."

One of the great difficulties the surveyor has to contend with in causing the rules and regulations of the Act to be properly observed, is from that class of small builders vibrating between workman and master, possessed of little or no means, but of considerable assurance; who undertake work often without notice, execute it improperly, and plead that it does not come under the Act, which, by the way, if able to decipher, they are unable or unwilling to understand: many of them are unable to affix their names to a notice. Surely as well for the sake of the public as of the surveyor, the owner and occupier should be made responsible as well as the builder. With those who set all law at defiance it is extremely difficult to deal.

ONE OF THE PUBLIC.

On Monday, the 11th of June, Mr. Hesketh will read a paper at the Royal Institute of British Architects, as to "What are the methods which it is most advisable to adopt in the Metropolitan Buildings Bill for regulating the thicknesses of walls." Builders, as well as architects and others interested in the subject, who have any opinions to express, should attend.

FOUNTAIN IN THE CRYSTAL PALACE, SYDENHAM.

On Saturday, June 2, the date of our present number, when there will be a flower show in the gardens of the Crystal Palace, the fountains in the building, namely, the crystal fountain, one of Monti's, and probably the Lions fountain in the Alhambra, will play during the afternoon. The waterworks, out of door, which are to make their first appearance on Saturday, are the fountains of the six basins on the terrace-garden, the two small circular basins just below the terrace, and the large round basin in the centre walk. These nine basins are called the *upper range*, to distinguish them from the great cascades and the immense double series of circular jets with centre spires 250 feet high, which lie lower down in the grounds, and which will not be ready till some time in July.

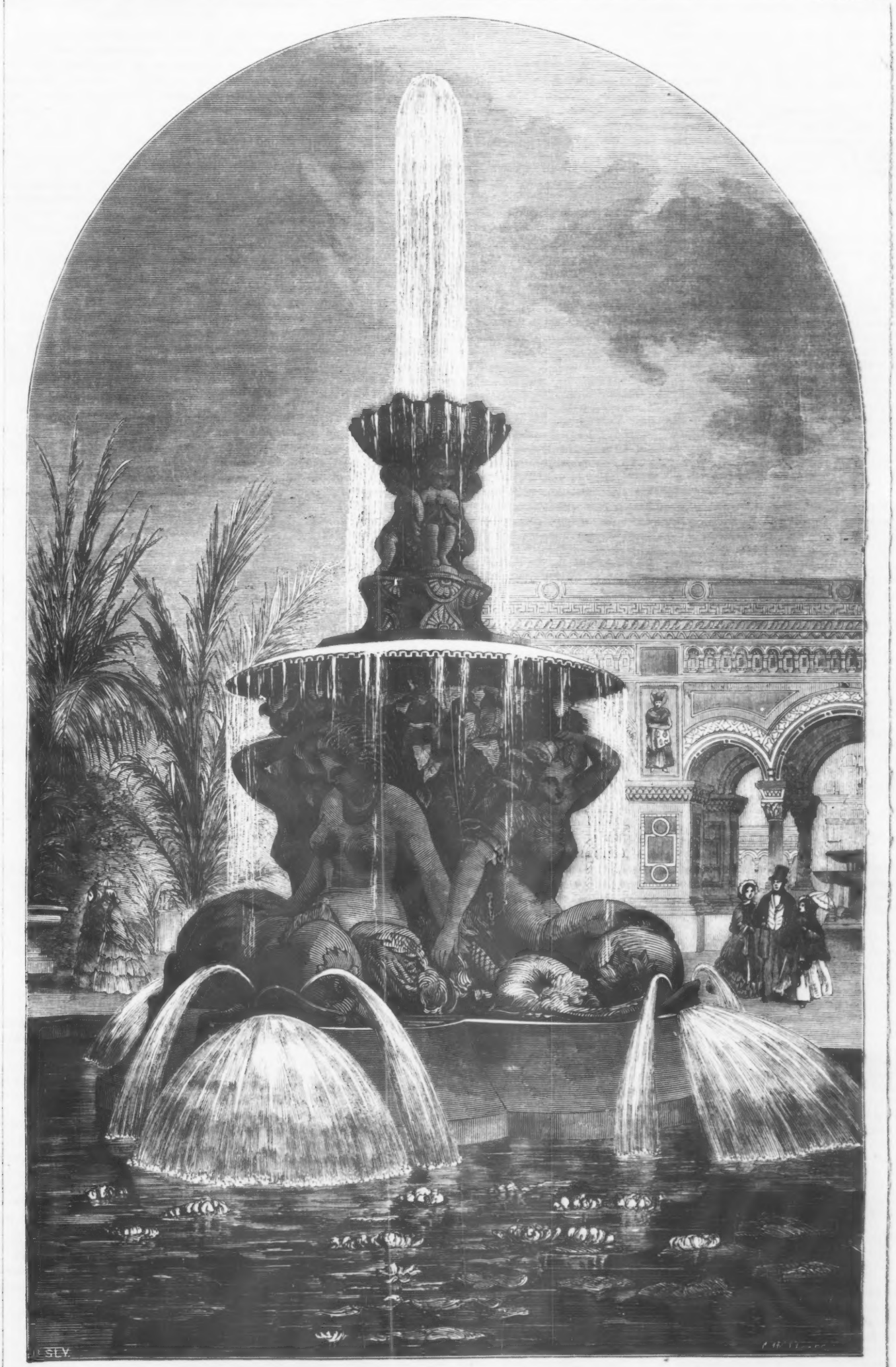
The *upper range* is played from the large lake at the Sydenham end of the building: its high jets are played from two square tanks just erected on the edge of the lake. The two high towers are for the high jets of the lower fountains.

We have engraved a view of the fountain in the nave designed by Mr. Monti. If we understand the intention rightly, the figures supporting the large shells typify by their colour four races of men,—white, the Caucasian; black, the Nubian; red, the North American Indian; and olive, the Australian. The smaller figures above these bear various appropriate fruits.

While we write the rain is coming down in the quiet, steady manner which indicates a firm determination to persevere. If, however, by Saturday the sun should gain the mastery, and it is much to be hoped he may, the scene at the Crystal Palace will be a fine one.

The fountains will all play on Monday between the parts of a concert, at which Alboni is to make her first appearance.

SEWERS (DRAINAGE) BILL.—On the motion of the Earl of Shaftesbury in the House of Lords, this Bill was last week read a second time. The standing orders having then been suspended, the Bill was passed through all its remaining stages.



FOUNTAIN IN THE NAVE OF THE CRYSTAL PALACE.

ARCHITECTS' CHARGES AND BRIDGEWATER CHURCH.

Mr. EDITOR,—In your brief paragraph upon this matter, there seems something so contrary to the practice of the profession, that it is necessary, for the justification of the members, that further particulars should be given in order to show the grounds upon which the charge of 570*l.* 7s. 4d. on an outlay of 3,946*l.* or nearly 15 per cent. could arise. It may be presumed, that a certain per-centage may have been fairly chargeable upon old materials; but the profession have yet to learn how it can be reconcileable for an architect to act in more than one capacity. If as an architect, it is inconsistent to be paid as clerk of the works. If as clerk of the works, he has no title to remuneration as an architect. I do not know even the name of the individual; consequently, in requesting further explanation, I am only influenced by the desire of vindicating the profession; to protect it from impropriety of practice if such exist; or to justify a charge however large, if fairly earned by legitimate professional services. Will you be pleased to procure the other special circumstances, for the matter must be cleared up.

THOMAS L. DONALDSON.

*** Thus called on, we give the heads of the account as we find them in the columns of the *Bridgwater Times*:—

"*Architect's Account.*

	£.	s.	d.
To furnishing all necessary designs working drawings and specifications, with professional supervision rendered, in carrying into effect the several works enumerated in statement of expenditure, amount being 3,946*l.* 3s. at a commission of 7½ per cent.	295	19	2
To furnishing a report of the state of dilapidation of the church, with rough estimate of repairs	2	2	0
To surveying and reporting to you the condition of tower	2	2	0
To furnishing a detail drawing and estimate of repairs of roof over chancel and chapel, amount of estimate 282*l.*	7	14	0
To furnishing a large revised plan of the church, for the Incorporated Society	5	5	0
To furnishing a detail coloured design for staining glass window	2	4	0
To furnishing designs for organ case and chancel screens	3	3	0
To travelling and incidental expenses incurred during the progress of these works	7	2	0
	325	11	2

Surveyor's Account.

To taking out quantities of work in the new chancel roof for the use of contractor's estimate, being 188*l.* 6s. 6d.	3	15	4
To estimating the value of works proposed, and measuring up and valuing works performed, as shown by accompanying statement, amount being 1,234*l.* 12s. 8d.	24	13	10
	28	9	2

Clerk of Works' Account.

To personal supervision of works from June, 1849, to April 25th, 1850	33	13	0
To personal supervision of works from April 25th, 1850, to December 25th, 1851, at 2 guineas per week	182	14	0
	216	7	0"

Total ... 570*l.* 7s. 4d.

The architect states, in a published letter, that there was a special arrangement for the payment of 7½ per cent. commission, and that his "personal superintendence saved the parish, in the re-use of old materials, at least twice the amount of his [my] full claims."

THE O'CONNELL MONUMENT.—Mr. Patrick Costelloe, one of the committee, has addressed a letter to the *Dublin Evening Post*, in which he states that there are 69 feet of the O'Connell monument already erected, and that the work "is progressing with as little delay as its vast extent and altitude will admit." The directors of the Glasnevin Cemetery have devoted a quarter of an acre of their most elevated ground for the monument and ornamented garden. When completed, the tower will be 30 feet higher than Nelson's pillar, in Sackville-street, Dublin.

BURIAL BOARDS.

The *furor* for obtaining cheap cemetery chapels and economic boundaries, and plantations of a growth exceeding all vegetative power, and drains of less value than the converted clay composing them, seems to rage with undiminished strength. We read of a chapel, lodge (containing several rooms), also entrance-piers, at Luton, that have been actually built for 450*l.*! and architects must have found, by painful experience, how often their designs for chapels—perfect marvels of economic construction—are thrown by, by the clerk to the Burial Board, proud man!—

> "Drest in a little brief authority;
> Most ignorant of what he's most assured;"

with, "Oh! your chapels are far too expensive for us!" How sad it is to see a cathedral city offering, for designs for its cemetery, a set of paltry premiums, and putting forth a farrago of threatening would-be-tyrannical conditions, to the medley of "Landscape Gardeners, Surveyors, and Others," who are to scramble for the next-to-nominal rewards, which, it may be observed, cannot be adjudged to merit so much as to a power which sharp practitioners possess of making their perspectives show more *materia architectonica* than the plans really afford. The "wolfish, ——, starved, and ravenous" desires of these managers of burial-grounds (for such they do appear), are justified in their exercise by the complaint. The parish cannot and will not grant us more. Why not then individuals? How many hundreds are yearly spent in inserting splendid memorial windows in churches too modest to merit them! Why cannot the Burial Acts secure a respectable fund—a loan—gradually to be liquidated by a tax upon the more costly interments? How ridiculous it is to see, as one may now-a-days, a chapel of starved, pigmy proportions, reared at a contract price of 250*l.* and close beside it a vulgar, vain-glorious tomb, dazzling with white paint and red letters, and iron-work, which has cost half as much as the chapel.

SPECTATOR.

CHURCH BUILDING NEWS.

Ringwood.—The new church here was consecrated on Tuesday before last. A partial rebuilding of the old edifice was originally contemplated, but the progress of the works disclosed so much constructive weakness, that one part after another had to be taken down, and at last the failure of the tower necessitated the reconstruction of the whole. The estimate, which was originally 3,789*l.* was thus increased to 5,659*l.* No part, therefore, of the old church remains, but the new edifice, though enlarged in width, represents the original church. Care, it appears, has been taken by the architects, Messrs. Francis, of London, to re-produce the ancient details. The church consists of nave, north and south aisles, transepts, tower at the intersection of the cross, and chancel. The style is Early Pointed, of the thirteenth century. The necessities of the parish have led to the erection of galleries, which mar the effect of the interior. The seats are all low, and for the most part without doors. The chancel has been rebuilt by the patrons of the living, King's College, Cambridge. The contractors for the work were Messrs. Cottman, of Poole. The consecration day was kept as a holiday, and ushered in by the ringing of bells, and the somewhat incongruous firing of cannon. The contractors, churchwardens, &c. dined together at the White Hart, and the workmen were not forgotten by the contractors, who "dined" them at the New Inn on the auspicious occasion.

Shrewsbury.—St. Michael's Church is at present undergoing a considerable enlargement, from plans by Mr. S. P. Smith, the carrying out of which has been entrusted to Mr. Dodson, of this town, builder.

Cwmavon.—The foundation-stone of a church, dedicated to "All Saints," was laid on 15th ult. at Ty Maen, near the Cwmavon Works, and at the instance of the Governor and Company of Copper Miners in England, and for behoof of the workmen employed at the Cwmavon Works, of which they are the proprietors. The style of the building is Early English, and, when completed, it will contain nearly 700 people. It will consist of a nave, two side aisles, two porches, chancel, organ chapel, vestry, and tower and spire 160 feet high, the whole of which will cost, probably, little less than 4,000*l.* The church is intended to be built out of funds provided, with a few exceptions, by the voluntary contributions of the individual shareholders in the corporation.

Weaverham.—The parish church of Weaverham, Cheshire, which has been undergoing extensive restoration for the last ten months, under the direction of Mr. Salvin, has been reopened for divine service.

Wolverhampton.—The churchwardens of St. John's Church are appealing to the inhabitants for subscriptions to put the interior and exterior in repair, for which purpose upwards of 2,000*l.* are required. More than 300*l.* are announced as already subscribed by nine subscribers.

COMPETITIONS.

The Oxford Museums.—Premiums have just now been awarded to three of the designs submitted, irrespective of the design selected for execution. The Delegacy submitted six designs out of the whole number to Messrs. Hardwick and Son, with the sole question, can they be executed for 30,000*l.*? The answer was, decidedly not: none of them can be executed for that sum. Thereupon the Delegacy decided that the prizes could not be given. Now, however, the successful design has been contracted for at 29,000*l.* and one of the other designs has also been tendered for at 30,000*l.* Under these circumstances, the Delegacy determined that, as the report had been disproved, they must proceed to award the prizes as originally intended, and they have been given as follow:—

Fiat justitia ruat cœlum	£100
A. Z.	50
Compasses	50

The first-named is the design of Mr. Edward M. Barry, the last of Mr. John Thomas, the sculptor at the Houses of Parliament.

Grimsby.—We are informed that Messrs. Bellamy and Hardy, architects, have obtained the premium of 25*l.* for their designs for a corn exchange and covered market, to be erected at Grimsby. Their estimate of the cost is 3,500*l.*

Braintree.—The Braintree Burial Board having offered a premium for designs, &c. for laying out, planting, &c. their new cemetery, and for building two chapels and a lodge, met on the 29th ult. and examined the plans which they had received from twenty-two different parties. They ultimately awarded the premium of twenty guineas for the plans marked "Spero," and the author was found to be Mr. J. Johnson, of Bury St. Edmund's. The Board also awarded a second premium, of five guineas, for the plans marked "Excelsior," they being, in the opinion of the Board, plans which deserved some mark of their approbation. They also expressed a high opinion of the plans marked "Q. E. D."

ARCHITECTURAL SOCIETY OF ARCHDEACONRY OF NORTHAMPTON.

The public spring meeting of this society, in conjunction with the Architectural Societies of the diocese of Lincoln and the University of Cambridge, and the Architectural and Archæological Society of the county of Leicester, was held at Peterborough on Wednesday before last. There were a large number of visitors from the neighbourhood. The room (attached to the recently-erected Wentworth Hotel) in which the meeting was held was adorned as usual with various specimens of art.

It was announced that the chair would be taken by the Marquis of Huntly, but the Marquis was unable to attend, and the Ven. Archdeacon Davys was called to the chair.

The Archdeacon, in his opening address, said he had reason to feel very grateful to the society for the improvements that had been effected through its means in the Churches of Northamptonshire.

A paper on Peterborough Cathedral was read by the Rev. G. A. Pool, who entered fully into the history of the cathedral, from its erection in 1118, and noticed the various architectural improvements by William de Waterville and others. He also combatted opinions entertained by Dr. Paley and others, as to the date of subsequent additions, and intimated that in the afternoon he should illustrate his paper within the cathedral.

The Rev. O. W. Davys then read a paper on the west fronts of English churches, with especial reference to that at Peterborough, in course of which he made the following remarks on its west porch:—

"It must ever be a cause of regret that what would elsewhere have been regarded as one of the most beautiful third pointed porches existing, should now be looked upon as an unworthy intruder when found placed within the centre arch of the façade. Nevertheless it will be evident, upon further examination, that this porch is a very valuable piece of architectural mechanism, and that it stands where it does

simply to form a buttress for the preservation of the whole structure, which early began to show signs of weakness, and to cause fear as to its approaching decay. The piers supporting the great arches, unable to bear the superincumbent weight of the gables and the outward thrust of the vaulting beneath, were beginning to lean outwards; and therefore, to prevent the fatal consequences which might arise if they were not kept from a further settlement, the library porch was constructed, and not without reflecting the greatest mechanical credit on its designer. Therefore we must not quarrel with this perpendicular innovation, as we are indebted to it, in all probability, for the preservation of the earlier portions of the front which are so much admired. We must not dwell longer on the consideration of the merits of the west front of Peterborough," added the reader, "but simply conclude what we have said with the remark, that if ever a perfect entrance to a church could be conceived, the design seems to be found here."

The Rev. T. James afterwards called attention to the drawings, rubbings, &c., with which the room was decorated. He pointed out a collection of photographs, brought by Rev. F. A. Marshall, to illustrate a paper which he had promised.

Several objects of archæological interest were also exhibited.

An evening meeting was held at the Wentworth Assembly Rooms, after about 70 gentlemen of the party had dined at the Angel Hotel. At the evening meeting, Archdeacon Churton read a paper on Croyland Abbey, and Sir Henry Dryden created considerable amusement on being called upon by the Chairman to read a paper, by announcing his intention to recount the chief architectural mistakes of his life,—an amusement to which all of us might well contribute at architectural meetings, for all have made mistakes who have had any architectural experience. A brief but interesting discussion followed Sir Henry's unreserved communication of what he conceived to be his various architectural blunders.

The following day was pleasantly occupied by a party of gentlemen in an excursion to Thorney and Croyland Abbeys, Northborough, Peakirk, &c., and the proceedings terminated with a second evening meeting at the Wentworth Rooms, at which papers were read by Mr. Bloxam, Rev. F. A. Marshall, &c. to an attentive audience.

THE GRAND TRUNK RAILWAY OF CANADA.

REPORTS to the London Board of Directors of the Grand Trunk Railway Company of Canada, by Sir Cusack Roney, Mr. A. M. Ross, and Mr. S. P. Bidder, have been issued in a printed form. These reports show the present state of progress of the various connected sections of this important line of railway, which is to traverse the colony westwards from Trois Pistoles at the mouth of the St. Lawrence, *vid* the river itself and its towns Quebec, Montreal, Toronto, &c. to Port Sarnia at Lake Huron, while another section runs to the Atlantic at Portland, through the United States, from Montreal by one fork, and from Quebec by another; this section lying nearly at right angles with the other. Portions of the line were already imperfectly formed in 1853, when the system was amalgamated into the Grand Trunk; and now rapid progress is being made in different parts of the line, and especially between Montreal and Toronto on the one hand, and Montreal and St. Thomas, to seaward of Quebec, on the other: indeed, the Atlantic line from Quebec to the junction of the fork at Richmond, and thence to Montreal, is already open, though not fully completed, and the remainder of the Atlantic line to Portland has been open since 1853. In the autumn of the present year a continuous line also will be opened in the main trunk, from St. Thomas and Quebec to Brockville, between Montreal and Toronto, a length of 325 miles, making, with the other sections now available, a total mileage of 643 out of the 1,100 miles composing the whole line. The country through which the Atlantic section runs, though forming part of the United States Atlantic sea-board, was an uninhabited and even unexplored forest in 1853. In the heart of this country there are now 3,000 active contributors to the railway traffic, and large clearances have been made. Twenty-eight sawmills have been erected, and others are in progress. Those now at work saw 500,000 feet a day, and it will take at least seventy years to exhaust this primary traffic, and then cleared lands will succeed with traffic equally profitable. All the other lines which approach the grand trunk, whether in Canada or from the States, come towards it at right angles, so as to form feeders, and not competing lines; and there is a large mileage of such lines already at work. In fact, this trunk line has taken possession, as it were, of the Canadas, and forms or will form the great route through which all its riches will be carried, in connection with the whole system of Canadian railways; and, as Mr. Stephenson says, in one of his reports, "the great object of the Canadian system of railways is to bring their rich provinces into direct and easy connection with all the ports of the east coast of the Atlantic, consequently to bring them nearer to Europe,"—and nearer to *home*, he might have added. Of the nature and extent of these riches an excellent abstract is given by Sir Cusack Roney, in his report, an abstract drawn much more from personal investigation in the various districts referred to, than from mere previous report. Sir Cusack is a most useful public servant. His peculiar forte appears to be the organization of great works. To him the English and Irish public were indebted for the organization of the Irish and connected British lines into a system by means of which tourists have greatly profited. He it was who may be said to have organized the Great Irish Exhibition; and now we find him engaged in what we may really call the commercial, agricultural, and manufacturing organization of the Canadas, by means of railway connection. There is a bright future in immediate prospect for Canada. Its resources will be suddenly opened up and immensely magnified, so soon as its railway system is developed. As it is, it is perhaps not generally known that immigration into the Canadas last year was greater than the whole of that into the United States,—a sort of cosmopolitan ballot in favour of limited monarchy and against republicanism. The reports on which our present remarks are based contain a great deal of interesting and valuable information as to the Canadas.

THE BUILDERS' BENEVOLENT INSTITUTION.

ON Thursday, 31st ult. a special general meeting of the friends and supporters of this valuable institution, founded in 1847, for allowing pensions to decayed master-builders, including all engaged in that business, and their widows, as well as to give temporary relief to deserving workmen in cases of accident, was held at the London Tavern, for the election of four pensioners; the president, W. Lee, Esq. M.P. in the chair.

The Chairman, in opening the proceedings, congratulated the meeting upon the state of the institution, and remarked that, notwithstanding the war and its depressing tendencies, this charity had continued its onward progress towards success. The funded stock now amounted to 4,750*l.*; divided as follows: relief fund, 3,250*l.*; and the building fund, 1,500*l.* To show the necessity of such an institution as this, he need only state that there were at the present time fourteen males and eleven females receiving its benefits, and that they had met there that day for the purpose of electing two males and two females, from a list of fourteen candidates, all of them, he had no doubt, very distressing cases, but who from the want of necessary funds, could not then be taken in. When they considered with what aching hearts those who were unsuccessful would depart, he trusted that all connected with the building trade would be induced to come forward, and by placing sufficient means at the disposal of the directors, enable them to admit all that might apply. In conclusion, the chairman called upon the friends of the institution never to cease their exertions on behalf of this society,—a society which he trusted ere long to see take its stand in the foremost rank with those noble charities of which England and Englishmen were justly proud.

The meeting then proceeded to the election, after which votes of thanks were passed to Mr. Lee, to Mr. George Bird, the treasurer, who afterwards took the chair, and to the scrutineers.

ELECTRICITY AND CHEMISTRY AT THE PANOPTICON.

WE witnessed some experiments with the great machine at the Panopticon the other day. It is a noble instrument. The charge is excited by steam power, and a lightning flash, *six or seven feet long*, is sent through an exhausted glass tube, and otherwise displays its peculiarities and its powers in various interesting vagaries, such as annihilating long lengths of wire, or dispersing them in smoke; lighting up a series of eminent names, such as those of Franklin and Faraday, in large illuminated letters, *through points along which the flash is passed, &c.* Some interesting galvanic or electro-chemical experiments have lately been made at the Panopticon. On Wednesday evening in last week, in the course of a lecture on the application of chemistry to science, Mr. G. F. Ansell made an experiment of singular interest, though not the first of the kind. After referring to hydrogen as the perfect type of the metals, and to compound bodies behaving like metals, he proceeded to pass a powerful galvanic current through a solution of ammonia over mercury, one pole of the battery being beneath the surface of the mercury, which swelled up rapidly, its physical appearance changing completely by the formation of an amalgam, it is believed, with the compound body termed ammonium. The nature of this compound the lecturer further illustrated by the formation of the amalgam of potassium, by means of the process first discovered by Sir H. Davy, and pointed out the analogy between these two amalgams; thence arguing the existence of a compound consisting of four equivalents of hydrogen, and one equivalent of nitrogen, comporting itself like a simple metal, and so forming an amalgam with mercury. Numerous as the gas-lights are of an evening in the Panopticon, by the way, they do not seem to fill the expanse of the interior well, so that many attractive objects are almost lost sight of in the haze. Could not the managers get up some grand exhibition of electric light in the ceiling or cupola by means of which to do justice to their evening display?

OPENING OF THE GREAT YARMOUTH WATERWORKS.

ON Thursday in last week, the ceremony of opening the Great Yarmouth Waterworks took place, in the presence of a large assembly, in the Market-place. The scheme originated with the present chief magistrate, Mr. C. J. Palmer. The works were designed by Mr. J. G. Lynde, C.E. of Westminster, and have been carried out under his superintendence. They consist of, first, works at Ormesby, viz. two filter beds, with steam-engines, tanks, wells, conduit pipes, and other apparatus for raising the water from the broad, filtering, and lifting it to the high-service reservoir for distribution; secondly, a high-service reservoir and stand pipe at Caister, with tanks, pipes, sluices, and apparatus for supplying and regulating the supply to the town, and for draining and cleansing the reservoir; and lastly, the main and service pipes, with hydrants, &c. The main is of cast-iron, 12 inches in diameter, and about 4½ miles long to the high-service reservoir at Caister, which will hold 600,000 gallons. This reservoir is about 50 feet above the Market-place, so that a constant supply of pure water is always at hand, and ready to flow to the highest houses in Yarmouth. The cast-iron main, from the reservoir to the town is 2½ miles long, and 12 inches in diameter. About 13 miles of mains and service pipes, varying from 12 inches to 3 inches in diameter, have been laid in the town. The works provide about 100 gallons of water per house, or 20 gallons per individual, per day. The filter beds at Ormesby are each capable of filtering 1,152,000 gallons in twenty-four hours. The engines can raise from the broad, into the high reservoir at Caister, 800 gallons in a minute. The works have been constructed by Messrs. Lucas (Brothers), of Lowestoft, the contractors, and the machinery and pipes by Messrs. Cochrane and Co. of Dudley.

THE OLD TOWN-HALL AT LEOMINSTER.

AN enthusiastic and excellent lady urges us to induce the inhabitants of Leominster to keep their old Town-hall for themselves. "What!" writes our fair correspondent, in the most vigorous and elegant of "hands,"—"What! Is the town so overcrowded that no other plot of ground can be found on which to erect 'a more commodious and spacious hall,' than that occupied by Mr. John Abel's picturesque half-timber building? Is it to be lost to the town for 95*l.*?—222 years' associations all knocked down by the auctioneer's hammer! A great shame is coming upon Leominster." We are glad to be able to calm the virtuous indignation with which our correspondent heaves. Mr. Arkwright, who purchased the old Town-hall at Leominster, intending to re-erect it near his own seat at Hampton-court, has generously presented the ancient structure to the inhabitants of Leominster, on condition of its being appropriated to some purpose of general utility, such as a public reading-room or museum. A public meeting has been held, and a subscription opened, for the purpose of carrying out the proposal. There is still virtue in the land.

GOVERNMENTAL BLUNDERS.—For the last three months the daily and weekly metropolitan papers have been crying out against the abortions, in the shape of monster egg-boxes, being put up at Aldershott, for the use of the army. From the descriptions we have read in the *Builder*, and from views which have been published, we feel confident any Fell or Fylde country wheelwright's apprentice could erect equal if not superior to those put up at Aldershott. The waste of public money at Aldershott is most disgraceful to Government, but it is only a part and parcel of what is going on in every department. Last week's *Builder* confirms the previous statements which that journal had published.—*Preston Guardian.*

Notices of Books.

The Theory and Practice of Horticulture. Second Edition, much enlarged. By John Lindley, F.R.S. &c. Longman and Co. London. 1855.

If we ever realise a grand development of horticulture and agriculture, as branches of manufacture, such as was the development of our cotton and other manufactures from the distaff and the spinning-wheel in the humble cottage, into the steam-urged loom and spinning Jenny in the extensive factory, it must be by the aid of such enlightened minds as shall show the way to convert the empirical complication of mere practical experience, with its often no less narrow and mistaken than peremptory and obstinate code of precepts, into enlarged and intelligent views of the physiology or the general laws of the vegetable creation, and its terrestrial and atmospheric correlations. And to this end, so far as regards one branch at least of vegetable manufacture, there is no more hopeful aid, we believe, as yet in existence, than Lindley's "Theory and Practice of Horticulture." The first edition of this valuable work was issued in 1840, since which time it has had an extensive circulation, and has been translated into the German, Dutch, and even Russian languages. Being more particularly restricted to principles, however, the author at length resolved to render the work more generally interesting and useful, by a more extensive illustration from examples and a more frequent reference to practical operations: he has thus greatly extended the matter, by supporting the physiological doctrines with an appeal to facts familiar to cultivators, or which ought to be; and the result is a still more interesting and popular compendium of the principles and practice, or the science and art, of horticulture than before. The new work is dedicated "To the Right Hon. T. F. Kennedy, lately one of her Majesty's Commissioners of Woods, Forests, and Land Revenues, who endeavoured to reform a public department in which unskilful management has been most disastrous," and "as a mark of respect for high official character and ill requited public service." The interest we have ourselves taken in the reform of the Forest department of the administration, induces us thus to quote Dr. Lindley's dedication; and if Mr. Kennedy was a reformer of such abuses as those the *Builder* has done more than any other publication to expose, it is right the public should know the reason why he was not regarded, *ab intra*, as the right man in the right place.

Dr. Lindley, in the discussion of his subject, adopts a very natural and simple order of sequence, his whole book being divided into disquisitions on,—1. Vital Force; 2. Germination; 3. Growth of the Root; 4. Growth of the Stem; 5. Action of the Leaves; 6. Action of the Flowers; and 7. Maturation of the Fruit. By these means the life of a plant is traced through all its principal changes, and opportunities afforded for the introduction of all correlative information useful or interesting to the cultivator.

Under the head of Growth by the Root, the author, we observe, gives some interesting details as to the mode in which roots may insinuate themselves into drains, and even pipes, so as to choke them up. That roots will do so is very well known, but perhaps few are aware of the extent of the power or capabilities of roots, or the pertinacity and subtlety with which they will insinuate themselves through even the slightest cracks in a pipe drain, accommodating their form and size to the dimensions, the peculiarities, and the windings, of the crack until their *object*, we may almost say, be effected, namely, that of reaching the moisture and the nutriment within. In this respect a root seems to display all the eagerness and the subtlety of a rat, with far more than its pliability and adaptability of form. The matter which really insinuates itself, is not solid, but, in fact, fluid, as it issues from the root point, attracted as it positively appears to be (by diamagnetic agency?) towards the moisture of which it is in search. The fluid matter thus enters and spreads in the crack, however thin, so that a thick root will at once assume a thin and flattened form like that of even paper; and so soon as it finds its way fairly into the interior of the tube, it thickens at once again, and then divides and subdivides with the most astonishing multiplicity till a mass of fibres accumulate, all dependant on the one thin papery fibre, that will completely choke up the pipe, however wide almost it may be. From a knowledge of these facts, we may judge of the care requisite in securing the perfect integrity of drains and pipes wherever there is any possibility of roots reaching them, as from the front plots of streets. A tree or shrub will send a shoot off for many yards in length towards a hopeful source of moisture and nutriment if it be much in need of it, and even such trifling little plants as the mignonnette, growing accidentally in a crack of an old pavement, has been known to send shoots down into a wine-cellar 5 or 6 feet below in search of moisture: whether it mistook the contents of the wine casks for the real "mountain dew," or had a special liking for the article itself, we shall not pretend to decide.

The amateur horticulturist, no less than the practical gardener, will find much curious and interesting information in Dr. Lindley's volume. Even the love-lorn damsel may here learn the way to perpetuate the single fragile leaf which may happen to accompany some prized though fleeting flower, presented her by one whom she still more prizes; for often a single leaf can be made to strike root, and send forth buds and shoots, and so become itself a plant or tree. Horticulture is indeed a most interesting and curious pursuit, and many wonderful metamorphoses might be effected that few think of as yet. Thus, flowers such as the hollyhock, might by degrees be dwarfed till they became as tiny and as delicate as the Forget-me-not; while on the other hand, a useful article, such as the pea, might be magnified by successive culture and repeated restriction to, and selection of, the largest produce, till it became a perfect giant by comparison. The Japanese are known to be able to dwarf even trees into plants (of full growth) an inch or two in height; and probably the only secret here, as in the case of the hollyhock, which we have ourselves dwarfed to a certain small extent, is to check the growth successively by transplanting, fructifying, replanting the diminished seed, and again checking the growth by transplanting or by setting slips which may yield still smaller flowers and seed. On the other hand, the large and luscious apple has doubtless been got from the small wild "crab" by some such process as that of the enlargement of the pea, combined with grafting; and so in many other instances ameliorations have been and may yet be effected to a wonderful extent, as indeed is now being done in this very way in the case of wheat and other corns. Gardeners can rear a salad in a single night. A French horticulturist recently discovered a way of forcing flower-buds into full bloom in course of a few minutes. In short, we anticipate *almost* as great things from the future study of horticulture as the Indian magician *appears* to effect in planting a mango-seed in presence of a surrounding multitude, and causing it to spring up into a plant, yielding its flower and fruit before their eyes, and in course of a few short hours of a single day. But this is looking *rather* far perhaps into the future. Meantime, with more moderate and realizable expectations, much *may* be done, by the study of such books as this of Dr. Lindley's, towards the attainment of that German paradise, for example, where the children amuse themselves by sowing flower-seeds, and reaping the flowers, all in the noon hours of a single sunny day.

Miscellanea.

MODEL DWELLING-HOUSES AT HAMPSTEAD.—It is proposed to erect three model dwelling-houses at Hampstead, for the accommodation of thirty families, from the designs of Mr. Charles Lee, architect; each family to have three rooms, with scullery, water-closet, and coal cellar. The following tenders have been delivered:—

Locke and Nesham	£5,475
Myers	5,460
Styche and Grey	5,220
Hopkins and Roberts	5,080
Patrick and Son	5,050
Clowser	4,930

The works will be commenced immediately.

FALL OF ARCHES, SOUTH LAMBETH WATER-WORKS.—On Wednesday, 30th ult. an accident took place at the reservoirs of the South Lambeth Water-works, adjoining the old House of Correction on Brixton-hill, by which, unhappily, four unfortunate men lost their lives. It appears that within the last few days one of the reservoirs had been covered in by a series of brick arches, the surface or crown of the arches being covered with a layer of clay two feet thick. It is stated that a number of the centres, on which the arches had been turned, had been removed, and no appearance of danger was observable. The men were employed removing others, when several of the arches gave way, and fell to the bottom of the reservoir with a loud crash, burying beneath them the unfortunate men who were at work below, the labourers who were engaged on the top falling with the mass. Messrs. Locke and Nesham are the contractors.

THE WHITTINGTON CLUB.—On Monday in last week a public meeting was held at the Freemasons' Tavern, Great Queen-street, to concert measures for restoring the building of the unfortunate Whittington Club. Mr. Mechi (in the chair) stated that the expense of rebuilding the club-house was estimated at 12,400*l.*; but the committee had resolved upon raising, if possible, 13,000*l.* to cover extra expenditure, and pay rent whilst rebuilding. The Duke of Norfolk had come forward with 10,000*l.* and it was for the club to raise the additional 3,000*l.* Already 950 shares of 1*l.* each had been subscribed for by 157 members; and as there were, when the club was burnt down, 1,000 members on the roll, there should be no difficulty in raising the remainder. Resolutions were agreed to, recognising the necessity of such a club for the middle classes, and approving of the plan proposed for raising 3,000*l.* for rebuilding and decorating the premises.

DWELLINGS OF THE LABOURING CLASSES IN IRELAND.—In the House of Commons last week, Sir W. Somerville obtained leave to introduce a Bill to encourage the providing of improved dwellings for the labouring classes in Ireland.

HOLYHEAD NEW HARBOUR.—The large harbour of refuge constructing by Government at Holyhead, from plans by Mr. J. M. Rendel, is making great progress. The northern (or great) breakwater is at present 5,000 feet in length, and is to be extended 2,000 feet farther in a north-east direction, by which it will give shelter to upwards of 500 additional acres of Holyhead-bay. The works are carried on with great activity, there being employed at present about 1,200 men, eight locomotives, four stationary engines, upwards of sixty travelling-cranes (some of them with steam power), and forty horses. In the quarries, upwards of five or six tons of powder are sometimes ignited at once, for blasting, and often from 40,000 to 50,000 tons of stone are obtained at a single explosion. Holyhead mountain is the quarry; and, literally, this mountain is being cast into the sea. At the timber-stageing there are fifty to sixty carpenters suspended 40 feet above the level of the sea, employed in throwing out new lengths of timber-stageing, consisting of five roads, over which the stone is tipped into the breakwater, averaging 4,500 to 5,000 tons of stone daily, or upwards of 1,000,000 annually. The works are superintended by Mr. G. C. Dobson, the resident engineer (formerly one of the superintendents of the breakwater at Plymouth), and are carried out by the Messrs. J. and C. Rigby, of Westminster.

VALUE OF GROUND-RENTS.—A large number of freehold ground-rents at Prince's-gate, Hyde-park, were sold by Messrs. Foster and Son, on the 21st of May. The prices fetched varied very singularly. We give some of the items. The existing leases have about ninety years to run:—

	Ground-rent.	Sold for.
The Ennismore Arms ...	£2 0 0	£150 0 0
No. 1, Princes-terrace...	5 0 0	285 0 0
„ 2, Ditto	18 0 0	545 0 0
„ 3, Ditto	3 0 0	120 0 0
„ 4, Ditto	3 0 0	120 0 0
„ 5, Ditto	2 0 0	135 0 0
„ 6, Ditto	2 0 0	125 0 0
„ 8, Ditto	2 0 0	245 0 0
„ 9, Ditto	2 0 0	105 0 0
„ 16, Ditto	3 0 0	210 0 0
„ 17, Ditto	3 0 0	120 0 0
„ 18, Ditto	26 0 0	780 0 0
„ 1, Ennismore-place	5 0 0	285 0 0
„ 2, Ditto	5 0 0	185 0 0
„ 4, Ditto	5 0 0	285 0 0
„ 2, Prince's-gate ...	60 0 0	1,800 0 0
„ 3, Ditto	42 0 0	1,260 0 0
„ 4, Ditto	6 0 0	230 0 0
„ 5, Ditto	75 0 0	2,250 0 0
„ 9, Ditto	52 0 0	1,560 0 0
„ 16, Ditto	105 0 0	3,200 0 0
„ 19, Ditto .....Peppercorn.....		250 0 0
„ 23, Ditto	10 0 0	410 0 0

THE HOSPITAL OF ST. CROSS FOR CRIPPLED SOLDIERS AND SAILORS.—A printed address has been issued to the trustees and subscribers to the Patriotic Fund and the public in general by Mr. H. Holloway, churchwarden of the parish and parish church of St. Faith with the parish of the Holy Cross, at Winchester, united, in which he suggests that the now celebrated Hospital of St. Cross, lately wrenched, as it were, out of the clutches of the reverend earl who had theretofore appropriated its splendid revenues, should be converted into a permanent asylum for 400 crippled and disabled soldiers and sailors of our army and navy. This, Mr. Holloway remarks, might be done without encroachment on the original purposes of the charity, or rather in fulfilment of its ultimate objects, after providing for the comparatively few "poor impotent men" for whose behoof it was originally intended. The Hospital of St. Cross was founded by Henry de Blois, Bishop of Winchester, and brother to King Stephen, in 1133, within the walls of Winchester, and founded anew without the walls, in 1157, as a curative hospital, for "a prior and thirteen poor impotent men." A subsequent foundation, by Cardinal Beaufort, in the time of Henry VI. provided for thirty-five decayed gentlemen, two chaplains, and three nurses. The means of the hospital are said to have increased from 250*l.* a year to no less than 22,000*l.* Besides the current revenues, moreover, there is a sum of 90,000*l.* which the Master of the Rolls, in recent proceedings against the Rev. Earl of Guilford, declared his "inability to compel his lordship to refund," on account, however, of a mere informality, which her Majesty has been petitioned to direct the Attorney-General to obviate or amend. It is farther suggested, that Prince Albert, as the soldiers' friend, should nominate the inmates.

ARCHÆOLOGICAL.—During the past week, at the parish church of Culford, near Bury, the workmen, in removing one of the monuments from against the east wall of the chancel, exposed to view a curious relic of church decoration of an early period. It would appear from this discovery that the chancel was part of a Norman church, and had been lighted not only by the great east window, as it is commonly termed, but by two small loop lights, one on either side of it, deeply splaying in the interior. The recesses or niches thus formed, and now re-opened, had been decorated by paintings on the plaster and stone work, representing in roundels or medals various incidents from the legendary history of the Romish Church.

BARRACKS.—Mr. G. A. Burn, architect, has submitted a plan for barracks, something on the principle of the "model prisons," having a central area, open to the top, and galleries, one above the other, at each side. The projector sets forth that good ventilation is thus obtained, the amount of internal walling greatly reduced, and that the division of the area into three moderate spans allows of roofs and floors of a light and simple construction, the result of which is a saving in cost.

WORKMEN'S PASSPORTS TO THE PARIS INDUSTRIAL EXHIBITION.—The Earl of Clarendon having received an assurance from the French Government that all British workmen desirous of visiting the Exhibition, and furnished with Foreign-office passports, shall be allowed to land in France and proceed to Paris without any hindrance whatever; our own Government have decided upon granting such passports without payment of the usual stamp duty and fee.

OPENING OF A NEW COAL DISTRICT FOR BIRMINGHAM.—The Birmingham Canal Company propose to construct a large tunnel under the Rowley Hills, to connect the South Staffordshire mining district with East Worcestershire, thus bringing into the network of canals converging in Birmingham a coalfield, with which it has hitherto had scarcely any connection. The expense of construction is expected to amount to 230,000*l.*

TRINITY COLLEGE CHURCH, EDINBURGH.—At the city council last week, a letter was read from Mr. Gourlay, offering to rebuild Trinity College Church within two years, if the council would hand him over the sum received from the railway company for that purpose. It was agreed to inform Mr. Gourlay that his proposal could not be entertained. On this occasion the Lord Provost said they were all most anxious to rebuild this church if a good site could be procured. There were one or two sites at present under consideration.

LAW OF PARTNERSHIP.—Mr. Bouverie has obtained leave of the Commons to bring in a Bill on the limitation of liability.

THE ARCHITECTURAL MUSEUM.—On Monday, 28th ult. Mr. Jopling gave a lecture on Curves applicable to architectural purposes, when the curve of the top step of the Parthenon was shown full size, 101 feet long, and the method of its setting out in the original temple described. The model will remain until after the meeting on the 25th.

LORD LONDESBOROUGH'S CONVERSAZIONE.—On the 28th ult. Lord Londesborough opened his house in Carlton House-terrace to a large circle of friends, including the Numismatic Society, and gave them an opportunity of examining part of his very extraordinary collection of antiquities and objects of beauty, —Greek, Saxon, Mediæval, and *Cinque-cento*. The latest addition to the collection, namely, the Saxon relics recently exhumed from graves in the Isle of Wight, excited considerable interest. These consist of large and small fibulæ, the gilding on some of them as bright and fresh as if modern work, two curious crystals supposed to represent the sun and moon, rings and beads of all sizes and forms.

FALL OF A WAREHOUSE AT LEITH.—On Monday week, a warehouse, consisting of a ground-floor and a loft, in Coatfield-lane, occupied by a slater, fell, burying two men and a woman under the ruins, who were at the time engaged in storing a cargo of roofing-tiles.

REMOVAL OF CITY CHURCHES.—The third report of the Parochial Commissioners, just published, relates to the City churches. The commissioners report that it would be highly advisable to remove twelve or sixteen of these churches, and to raise at least an equal number in other adjacent parishes; and they express their entire concurrence in the design and general purposes of the Bill of 1854, which the House of Commons rejected. The report is dated 14th March, 1855.

STREET INSCRIPTIONS.—A glass painter, W. Grant, is bringing into use a mode of displaying the names of streets, so that they can be read at night as well as day. The name is painted and burnt in on a slip of glass, and is suspended to the upper rim of the street lamps. He has received orders, we are told, to hang the plates in two metropolitan parishes.

MR. THOMAS BARCLAY, who has filled the office of county surveyor, in the King's County, Ireland, for sixteen years, expired suddenly on Thursday in last week, when about to attend a presentment session.

THE INFLUENCE OF THE FINE ARTS.—At the M'Lellan Rooms, Glasgow, on Tuesday in last week, Mr. Sheriff Bell delivered a lecture "On the Influence of the Fine Arts." The rooms were brilliantly lighted up, and the centre hall, ample as it is, did not nearly accommodate the whole assemblage. For half-an-hour previous to the lecture, opportunity was afforded of examining the pictures, under the quickening influence of music. Bailie Mitchell took the chair, in the absence of the Lord Provost from illness. In course of his lecture, Sheriff Bell said that what he predicated of the fine arts was, that they were extended to all classes in all ages and countries; that they afforded scope for new and varied manifestations of intellect; and that, above all, they had exercised a moral power in conjunction with the noblest efforts of the legislator, the philosopher, and the poet. Mere imitation, though necessary in its place, was not the end or aim of art. The thing to be imitated must previously be understood. If imitation were everything, the work of the engraver or photographer might rank with that of the highest artists. It was in selecting and combining outlines that the genius of the artist became apparent. He pointed out the connection which exists between the fine and the useful arts; enlarged on the gratitude due to cultivators and encouragers of the fine arts; paid an eloquent tribute to the memory of Mr. M'Lellan, and concluded by expressing a hope that others would contribute to the enlargement of the collection, and that the citizens would encourage it by their frequent and studious attendance. The lecture was attentively listened to, and enthusiastically applauded.

KIDDERMINSTER BATHS, &c.—The Baths and Washhouse in Mill-street are drawing towards completion. The front elevation consists of a centre portion in two stories, with a wing of one story on each side. The materials are of red bricks, with a whitish stone from Ombersley for the dressings, and with terra-cotta ornaments. There are two entrances in the front, with a window between. The eaves project considerably and are supported by ornamental brackets in terra-cotta. Beneath the eaves is a frieze with terra-cotta decorations. The windows have stone pediments, and the flights of steps at the front doors are finished with stone piers. The swimming-bath is immediately at the back of the centre building. Its dimensions are 38 feet by 30 in area, and 4 feet 9 inches in depth at one side to 5 feet 9 inches at the other. It has a platform provided with dressing-boxes. The washhouse is on a small scale. The floors of the bath-rooms and washhouse stand upon brick piers, enabling a mechanic to get beneath to attend to the tubing and apparatus. The chimney from the boiler-house is 57 feet high, is square outside, and does not taper: it is ornamented with a coping. The water used for the establishment is taken from the Stour in the rear of the building.

M. GAUTHIER, of the French Institute, and an architect of merit, died at Paris a few days ago. He was a corresponding member of the Institute of British Architects.

CHURCH VENTILATION.—The ventilation of St. Thomas's Church, Newcastle-upon-Tyne, has been effected under the direction of Mr. C. Burnup, by a simple adaptation of the common method of ventilating coal mines. No want of fresh air was felt: what was wanted was the removal of vitiated air. The tower is at the west end, and openings have been made into it through the ceiling above the organ, and through the wall behind it. These openings communicate with a sheet-iron tube, 12 inches in diameter, which is carried a considerable distance up the tower. Inside the tube, near the bottom, is fixed a copper gas pipe, $\frac{3}{4}$ inch in diameter, in the form of a ring, perforated for jets of gas. The flame is steadied and increased in heat by being enclosed between two copper cylinders, one inside, the other outside, the ring. A draught is thus obtained, which carries off the vitiated air. The local *journal* urges that the Music-hall, the Lecture-room in Nelson-street, the Lecture-room of the Literary and Philosophical Society, and in fact all public rooms and buildings in the town, frequented by crowded audiences, ought to undergo similar ventilation.

"HOME FOR INDIGENT GENTLEWOMEN."—The performance on Wednesday night of Mr. H. Leslie's oratorio of "Immanuel," at St. Martin's-hall, must have produced a considerable addition to the funds of the above excellent institution, if we may judge from the crowded audience who were collected together, and amongst whom we observed many celebrated in literature and art. We may be excused departing a little out of our usual course in commenting upon this clever work of musical science: it illustrates once again, how the strong love of art may conduct an enthusiastic amateur into a veritable artist. Considerable novelty of melody, masterly scoring, and skilful orchestral instrumentation give the stamp of profound scholarship to this production, and deservedly rank it amongst the best efforts of native talent. Madame Novello, Miss Dolby, and Mr. Weiss exerted themselves with excellent effect. Mr. Sims Reeves suffered from a cold.

CAST-IRON STAIRCASES.—Sir,—Can any of your readers inform me of the best mode of executing a cast-iron staircase, in such manner as to prevent the slipperiness which is generally the result after a few years wear with the ordinary modes of construction when the treads are made solid—that is, when circumstances will not allow of their being *perforated*: which is the case with reference to two staircases now about to be erected in a public building. In the ordinary mode of construction a portion of the tread is raised, and the surface indented with diagonal lines, but as this is found to wear down, a different mode of attaining a lasting, yet not slippery, surface is required. Casing in part with wood is objected to.

G. L.

TENDERS

For Ercall Vicarage and stabling, Salop, for the Rev. R. T. Forester. Messrs. Wehnert and Ashdown, architects:—

Preen (Ludlow)	£2,651	0	0
Barratt (Market Drayton)	2,358	16	8
Dodson (Shrewsbury)	1,850	0	0
McKenzie (Wellington)	1,825	0	0
Large (Wellington)	1,597	0	0
Nevetts, Brothers (Ironbridge)	1,519	0	0

For a villa at Sutton. Mr. T. E. Knightley, architect:—

Curry	£1,735	0	0
Howlison and M'Clymont	1,343	0	0
Smith	1,325	0	0
Chapman	1,253	0	0
Walbutton (accepted)	1,253	0	0
Gosling and Clard (Woolwich)	921	0	0

For building six cottages at Isleworth. Mr. R. W. Wright, architect. Quantities supplied:—

Perman (Hounslow)	£1,400	0	0
Lawrence and Sons (London)	1,344	0	0
Burchett (Isleworth)	1,324	0	0
Biscock (Hounslow)	1,262	0	0

For building fourteen houses at Kingston, for Mr. M Wall. Mr. Blenkarn, architect. Quantities supplied by Mr. Crocker:—

Macrostic	£5,190	0	0
Macey	4,995	0	0
Colls and Co.	4,760	0	0
Mason	4,186	0	0

TO CORRESPONDENTS.

"An Amateur Reader."—"A Competitor."—"E. F."—"W. W."—"B. L."—"Mr. C."—"R. H."—"D. C."—"R. H."—"Bardi" (a type).—"W. H. H."—"J. S."—"F. and H. F."—"C. F. D."—"W. H. T."—"W. L. S."—"E. K. D."—(we will look to any description that may be sent).—"Aberystwith Clock Tower" (see p. 120, ante).—"R. M. S."—"S. S."

"*Books and Addresses.*"—We are forced to decline pointing out books or finding addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and not to the Publisher.